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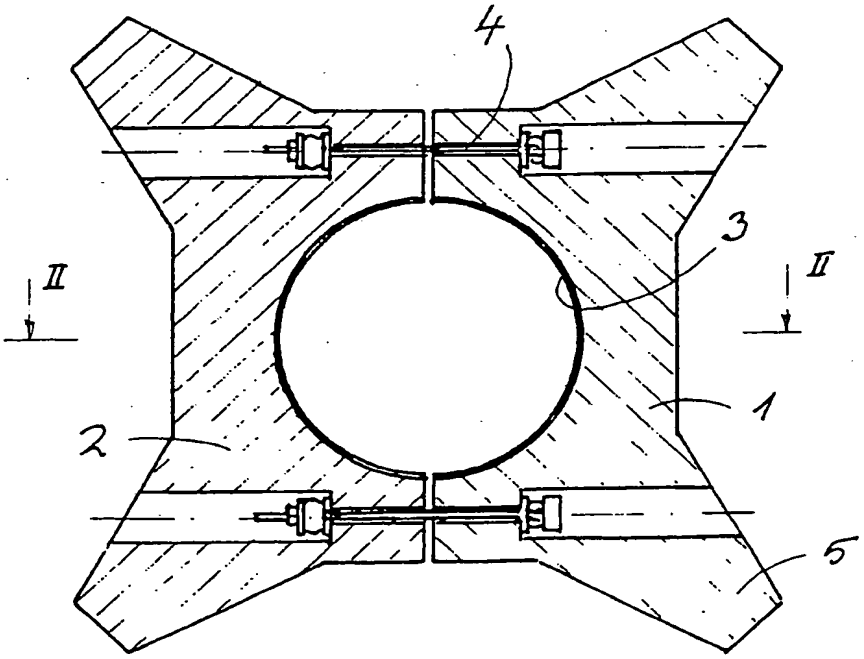
(54) Title: CONCRETE ANCHORING WEIGHT BLOCK

(57) Abstract

Concrete anchoring weight block made of concrete for a submarine pipeline of plastics material, comprising two identical block halves (1, 2) being clamped together by bolts (4), the blocks thereby having in a cross-section to the longitudinal direction of the pipeline a substantially square outer shape with from the square shaped portion of the assembled weight-block outwardly protruding, tapered support legs (5) arranged as prolongations of the diagonals in the square.



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Concrete Anchoring Weight Block

The present invention is related to an anchoring weight made of concrete for submarine pipelines made of plastics material, according to the preamble of the claims.

It has been well know when laying pipelines of plastic to equip such pipelines with weights to lower the pipelines down to and to to hold them an the sea bed. Such weights partly have been made of lead, partly of concrete, arranged spaced apart along the pipeline, whereby the hanging of the pipeline between the weights was taken into consideration. The purpose of the weights, however, has been exlusively to give the pipeline sufficient weight to enable the lowering.

When laying on the sea bed the pipeline is however exposed to considerable forces from waves and currents and it therefor is of substantial importance to fix the weights to the pipeline. Such weights have been made with an annular or square shape. Square weights are exposed to considerable torsion forces in addition to friction forces between the pipeline and the sea bed.

The achoring weight according to the present invention has a shape which has proved to be superior above known achoring weight shapes in connection with the torsion forces as well as the friction forces. The anchoring weight according to the present invention will be digged into the sea bed by tranversal forces, thereby stabilizing the pipeline.

By means of the achoring weiht shape according to the present invention, a weight is provided which gives a submerged pipeline a large stability in the transversal as well as the longitudinal direction of the pipeline.

The drawing discloses in Fig. 1 a section perpendicular to the longitudinal axis of the pipeline and Fig. 2 discloses an axial section of the weight disclosed in Fig. 1.

The anchoring weight according to the present invention is made in two equal parts 1 and 2 of concrete, such that they, when assembled, create substantially a square

comprising protuding legs 5 as prolongations of the diagonals in the square. The terminations of the legs are plane sufaces arranged perpendicular to the diagonals whereby the cross section of the legs is increasing from the end surfaces towards the connection point to the substantially square portion of the weight. The inner, substantially semi circular cutouts of the weight blocks or parts comprise elastic bands 3 abutting the pipeline compensating possible unevennesses in the concrete structure.

Two weight block halves 1 and 2 are clamped together with bolts 4 through corresponding bolt holes in the parts 1 and 2, whereby the diameter of the bolt hole is made to correspond with the bolt dimension only in a portion of of the block adjacent the opposite block and the rest of the hole has a larger diameter, allowing the bolt head and the corresponding nut to be arranged at the shoulder at the point with smaller diametr, thereby to enable use of relatively short bolts 4.

Patent Claim

Concrete anchoring weight block made of concrete for a submarine pipeline of plastics material, comprising two identical block halves (1,2) being clamped togehter by bolts (4), characterized in the blocks having in a cross section to the longitudinal direction of the pipeline a substantially square outer shape with from the square shaped portion of the assembled weight block outwardly protuding, tapered support legs (5) arranged as prolongations of the diagonals in the square.

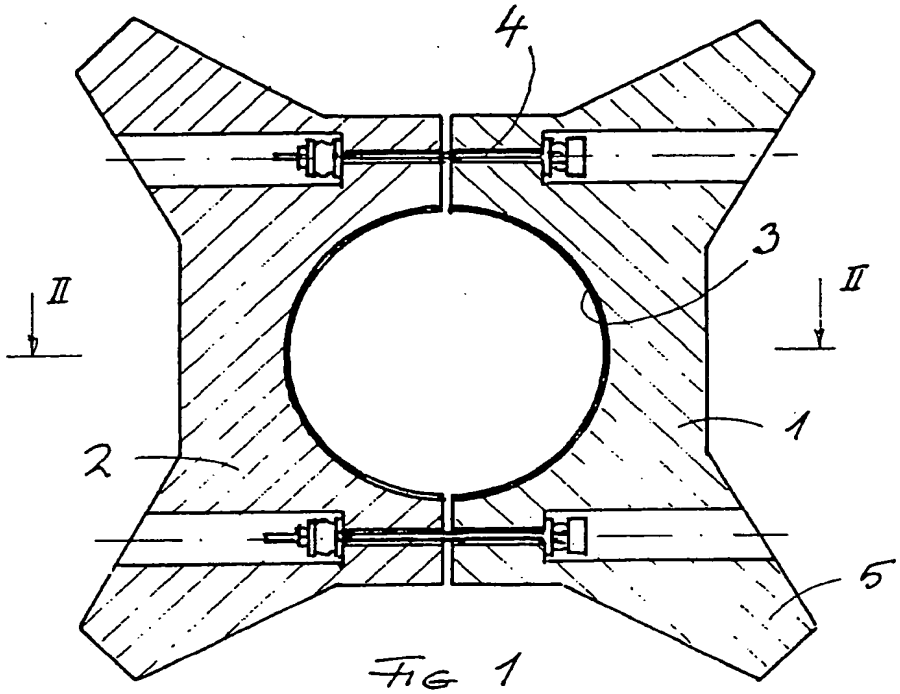

FIG 1

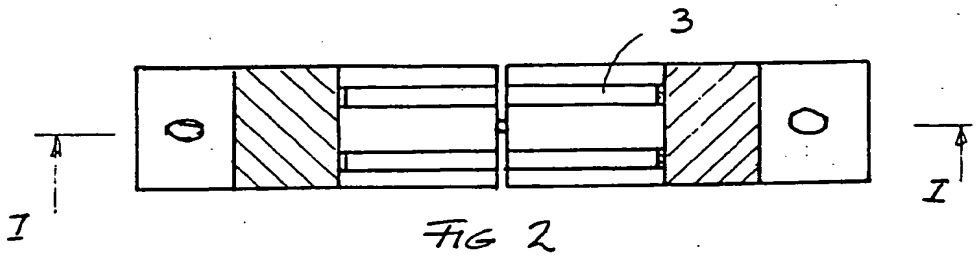

FIG 2

INTERNATIONAL SEARCH REPORT

International Application No PCT/NO89/00043

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC 4

F 16 L 1/04

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System [8]	Classification Symbols
IPC 4	F 16 L 1/00, /04
US Cl	61:72.2, 105, 107, 113; 138:178; 405:172

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [9]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category [10]	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
X, Y	SE, A, 7307706-7 (GRÄNGES ESSEM PLAST A/S) 1 December 1974 See page 2, lines 22-27, figure 1	1
Y	SE, B, 422 835 (AB BJÄSTA BETONGVARUINDUSTRI) 29 March 1982 See fig. 1 & SE, 8000214	1
Y	US, A, 2 518 981 (A.J. EDWARDS) 15 August 1950 See fig. 2	1

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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
1989-07-07	1989 -07- 18
International Searching Authority	**Signature of Authorized Officer**
Swedish Patent Office	Axel Lindhult